

CLAIMS

What Is Claimed Is:

1. A punch assembly, comprising:

a mandrel, comprising a shaft and a head, said head defining an outer diameter and a face;

a punch defining a base end and a cutting end, said cutting end defining a cutting edge terminating in at least one tip; and

attachment means for attaching said punch to said mandrel.

2. The assembly of Claim 1, wherein said punch further comprises a generally cylindrical cross-section defining an outer diameter, said punch outer diameter being greater than said head outer diameter.

3. The assembly of Claim 2, wherein said punch further defines a pair of opposing arcuate portions on said cutting surface in spaced relation.

4. The assembly of Claim 3, wherein said punch comprises a pair of said tips, said tips and said arcuate portions in alternating space relation with each other.

5. The assembly of Claim 4, wherein:

said mandrel further defines a threaded bore formed in said face;

said punch further defines a bore formed in said base end; and

said attachment means comprises at least one bolt inserted through said punch bore and threadedly engaging said threaded bore.

6. The assembly of Claim 5, wherein said mandrel comprises a elongated shaft defining a distal end and a head end, said head extending from said head end.

7. The assembly of Claim 6, wherein said head defines a generally circular cross-section and said threaded bore is located at the center of said cross-section.
8. The assembly of Claim 7, wherein said punch defines a cross-section having a generally circular ring shape.
9. A method for creating holes in sheets of material, comprising the steps of:
 - obtaining a powder-actuated tool comprising a receiver;
 - attaching a punch assembly to said receiver, said punch assembly comprising:
 - a mandrel, comprising a shaft and a head, said head defining an outer diameter and a face;
 - a punch defining a base end and a cutting end, said cutting end defining a cutting edge terminating in at least one tip; and
 - attachment means for attaching said punch to said mandrel;
 - placing said punch a said sheet; and
 - activating said powder-actuated tool to drive said punch through said sheet thereby forming a said hole.
10. The method of Claim 9, wherein said attaching, placing and activating steps comprises attaching, placing and activating using a punch further defining a pair of opposing arcuate portions on said cutting surface in spaced relation.
11. The method of Claim 10, wherein said attaching, placing and activating steps comprises attaching, placing and activating using a punch further defining a pair of said tips, said tips and said arcuate portions in alternating space relation with each other.
12. The method of Claim 11, wherein said attaching, placing and activating steps comprise attaching, placing and activating using a punch assembly further defined by:

said mandrel further defining a threaded bore formed in said face;

said punch further defines a bore formed in said base end; and

said attachment means comprises at least one bolt inserted through said punch bore and threadedly engaging said threaded bore.

13. The method of Claim 12, wherein said attaching, placing and activating steps comprise attaching, placing and activating using a mandrel defined by a diameter that is greater than a diameter defined by said punch;

whereby said diameter of said mandrel prevents said punch assembly from passing through said hole.

14. A punch assembly for punching a hole in a section of metal sheet, comprising:

a mandrel, comprising a shaft and a head, said head defining an outer diameter and a face;

a punch defining a base end and a cutting end, said cutting end defining a cutting edge terminating in at least one tip; and

attachment means for attaching said punch to said mandrel.

15. The assembly of Claim 14, wherein:

said mandrel further defines a threaded bore formed in said face;

said punch further defines a bore formed in said base end; and

said attachment means comprises at least one bolt inserted through said punch bore and threadedly engaging said threaded bore.

16. The assembly of Claim 14, wherein said mandrel comprises a elongated shaft defining a distal end and a head end, said head extending from said head end.

- 17.** The assembly of Claim 14, wherein said punch defines a cross-section having a generally circular ring shape.
- 18.** The assembly of Claim 14, wherein said punch further comprises a generally cylindrical cross-section defining an outer diameter, said punch outer diameter being greater than said head outer diameter.
- 19.** The assembly of Claim 14, wherein said punch further defines a pair of opposing arcuate portions on said cutting surface in spaced relation.
- 20.** The assembly of Claim 20, wherein said punch comprises a pair of said tips, said tips and said arcuate portions in alternating space relation with each other.